

Amendments to the Drawings

The attached sheet of drawings includes changes to Figures 9-12. This sheet, which includes Figures 9-12, replaces the original drawing sheet including Figures 9-12. The drawing has been modified to label each of Figures 9-12 as “prior art,” as recommended by the examiner.

Attachment: replacement sheet.

Remarks and Arguments

The examiner has objected to the drawings of the application, and suggests that Figures 9-12 be labeled "Prior Art." Being submitted herewith is a replacement drawing sheet containing Figures 9-12, each of which has now been labeled "Prior Art." Reconsideration of the drawings under this ground for objection is respectfully requested.

Claim 18 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite. In making this rejection, the examiner has stated that Claim 18 contradicts the recitation of Claim 1, which is argued to state that only ports within a group are connected by the channels. However, the "tunneling channels," which are recited in Claim 18, are different than the channels recited in Claim 1. Whereas the channels recited in claim one connect together ports of the same group, the tunneling channels connect together the channels of different segments. Thus, the channels still connect together ports of the same segment but, in the Claim 18 embodiment, the tunneling channels are added to provide fluid communication between channels of different segments. Reconsideration of Claim 18 under this ground for rejection is respectfully requested.

Claims 1-8, 10-11 and 16-17 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,270,212 ("Horiuchi"). In making this rejection, the examiner has stated that Horiuchi shows a valve for interconnecting ports of a stator that is organized as segments of a circle for connecting ports grouped within each segment. However, there are some important distinctions between the present invention and the prior art of Horiuchi.

Horiuchi discloses a cell analysis apparatus that includes a rotary sliding member having a sample metering chamber and a mixing chamber, and a fixed portion arranged so that its sliding surface faces the rotary sliding member. But a close examination of the Horiuchi device reveals that there are, in fact, two stationary portions. These are

labeled, respectively, with reference numerals 40 and 50. As described in column 3, line 67 through column 4, line 4 of the Horiuchi disclosure:

The pretreatment portion 1 comprises a rotary sliding member 20 intermittently rotated a predetermined angle by a drive motor 100, and a pair of upper and lower fixed portions 40 and 50 which support the rotary sliding member 20 therebetween and are fixedly mounted.

Each of the stationary portions 40, 50 have ports, so that ports exist to either side of the rotary portion. The rotary portion provides fluid communication between a particular port of stationary portion 40 and a corresponding port of stationary portion 50. Thus, three separate portions are necessary to make the desired fluid connections.

In contrast with Horiuchi, the present invention provides a valve that uses a single rotary portion and a single stationary portion. Fluid communication in the valve is provided between different ports of *the same* portion, *i.e.*, the stationary first member. This limitation is clearly recited in Claim 1, which states that the channels of the second (rotary) member "connect predetermined ones of said ports of said first member with one another in a liquid conducting manner." Nowhere in Horiuchi is there any suggestion of a valve having two portions that operate in this manner. Moreover, groups of ports in Horiuchi, such as ports 57a-57d shown in Figure 2, do not appear to be form "a substantially straight arrangement," as is recited in Claim 1. Each of Claims 2-8, 10-11 and 16-17 depends ultimately from Claim 1, and each is therefore equally unsuggested by the Horiuchi prior art. Reconsideration of Claims 1-8, 10-11 and 16-17 under this ground for rejections is respectfully requested.

Claims 1, 10-12, 16 and 18 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,477,207 ("Auger"). In making this rejection, the examiner has stated that Auger discloses a rotary valve with ports in a line, referencing elements 9 and 15, 12 and 18 from the patent figures. The examiner further argues that channels 23 and 24 shown in Auger "can be treated as being in two segments." However, the Auger prior art is also quite different from the present invention.

Auger discloses valves used for a gas chromatography apparatus. The valve has a set of outer ports on a circular surface and a set of inner ports on an adjacent circular surface, concentric with the first. The stator 2 has a set of ports arranged along two circles, and the rotor 1 has slots cut in it at varying orientations. In different relative positions between the stator and the rotor, the slots in the rotor align with different ports on the stator, so as to provide gas connections between different sets of ports. However, Auger is directed to gas chromatography, not liquid transfer. In addition, the valve of Auger has ports that are connected to each other, but these ports do not lie in a straight line. As mentioned above, these ports are arranged in a circular pattern, much like the prior art discussed in the "background" section of the applicant's disclosure. Claim 1 of the present application specifically recites "at least one group of ports forming a substantially straight arrangement of ports." Nowhere in Auger is there any suggestion of such a straight line arrangement of ports. Each of Claims 10-12, 16 and 18 depends ultimately from Claim 1, and each is therefore equally unsuggested by the cited prior art. Reconsideration of Claims 1, 10-12, 16 and 18 under this ground for rejection is respectfully requested.

Claims 1 and 9 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,800,602 ("Jones"). The examiner has stated that Jones shows a valve with stator ports 1-8 and rotor channels 11-14, and has concluded that the Jones disclosure meets all of the limitations of the subject claims. However, as with the other prior art references, there are some significant distinctions between Jones and the claims falling under this rejection.


The Jones reference is specifically discussed in the "background" section of the applicant's disclosure. Jones discloses an eight-port valve block having a single channel and a movable valve plate member slidably affixed thereto via a valve plate carrier. However, as noted in the Jones abstract, the valve requires one or more six-port programming valves in series with the eight-port valve in order to correctly function. Moreover, the connection scheme of the Jones valve is simple, but it can be seen from Figures 4 and 5 that the connection schemes interconnect ports of a group with ports

outside of the group. In contrast, the applicant's Claim 1 recites that: "said first member comprises at least one group of ports forming a substantially straight arrangement of ports" and that "said at least one channel of each individual segment represents a predetermined connection scheme for connecting predetermined ones of said ports of said at least one group of ports only, with one another." The disclosure of Jones makes it clear that the Jones valve is not limited in this manner. Thus, Jones does not suggest the limitations of Claim 1. Claim 9 depends from Claim 1, and is therefore equally unsuggested by the cited prior art. Reconsideration of Claims 1 and 9 under this ground for rejection is respectfully requested.

The applicant acknowledges the potential allowability of Claims 13-15, if they were to be rewritten in independent form. However, these claims have not been so rewritten at this time, as the claims from which they depend are believed to be allowable over the prior art of record.

In light of the foregoing amendments and remarks, it is respectfully requested that all the claims be allowed such that the application may be passed to issue. If it is believed that a telephone conference will help expedite the prosecution of the application, the examiner is invited to call the undersigned. The Commissioner is hereby authorized to charge any additional fees due for the filing of this paper to the applicant's attorneys' Deposit Account No. 02-3038.

Respectfully submitted


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